

AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows:

1. (Currently Amended) A reusable software block stored in a computer-readable memory and adapted to control multiple instantiations of a peripheral device within a system, the reusable software block comprising:
 - a device hardware abstraction layer defining offset values for registers of the peripheral device and defining a data structure for the peripheral device; and
 - a platform hardware abstraction layer defining an address map of the system, the platform hardware abstraction layer adapted to initialize each instantiation of the peripheral device via calls to the device hardware abstraction layer.
2. (Currently Amended) The reusable software block of claim 1 wherein the device hardware abstraction layer comprises:
memory registers register locations adapted to be configurable during initialization of the system; and
an interrupt connections adapted to be configurable configuration, which is configured for the peripheral device during initialization of the system.
3. (Currently Amended) The reusable software block of claim 2 wherein the memory registers register locations and the interrupt connections configuration define the data structure of the peripheral device using variables.
4. (Currently Amended) The reusable software block of claim 1 wherein the data structure of the peripheral device is defined in the device hardware abstraction layer using variables, the memory address map comprising:
memory locations associated with each instantiation of the peripheral device.

5. (Currently Amended) The reusable software block of claim 4 wherein the platform hardware abstraction layer initializes each memory location according to the memory map.

6. (Original) The reusable software block of claim 1 wherein the data structure of the peripheral device is defined in the device hardware abstraction layer using variables, the platform hardware abstraction layer comprising:

an interrupt configuration corresponding to interrupt connections for a particular implementation of the peripheral device.

7. (Currently Amended) The reusable software block of claim 6 wherein the ~~platform hardware abstraction layer~~ interrupt configuration initializes each interrupt connection of the particular implementation of the peripheral device according to the interrupt configuration.

8. (Withdrawn) A method of initializing multiple instances of a peripheral device within an integrated circuit, the method comprising:

coding a peripheral device in a device hardware abstraction layer, the coded peripheral device representing a functional and behavior model of a circuit element independent of the integrated circuit;

mapping the peripheral device of the device hardware abstraction layer onto the integrated circuit for each instantiation of the peripheral device.

9. (Withdrawn) The method of claim 8 wherein each instantiation of the peripheral device is modified programmatically from the basic structure during mapping.

10. (Withdrawn) The method of claim 8 wherein the step of mapping comprises:
defining parameters for each instance of the peripheral device module; and
instantiating each instance of the peripheral device module using the defined

parameters to modify the variable parameters of the basic structure.

11. (Withdrawn) The method of claim 8 wherein the basic structure comprises:
variable base addresses of memory registers in an integrated circuit; and
variable locations of interrupt connections in an integrated circuit.
12. (Withdrawn) The method of claim 8 wherein the step of coding comprises:
defining base addresses of registers and interrupt location of interrupt connections
within the basic structure as variables within the device hardware
abstraction layer.
13. (Withdrawn) The method of claim 8 wherein the step of mapping comprises:
initializing registers of the peripheral device using an initialization function
defined within the peripheral device module, the initialization function
adapted to receive a memory location and to initialize the registers of the
peripheral device with the memory location.
14. (Withdrawn) The method of claim 8 wherein the method is performed using ANSI C Code.
15. (Withdrawn) The method of claim 8 wherein the peripheral device is coded using a
command to construct a structure representative of register locations for each instantiation of the
peripheral device.
16. (Currently Amended) A system for instantiating multiple instances of a peripheral device
within an integrated circuit, the system comprising using a single configurable code block, the
system comprising which is stored in a computer-readable memory and comprises:
a device hardware abstraction layer defining a configurable structure for the
peripheral device; and

a platform hardware abstraction layer adapted to configure the structure of each particular instantiation of the peripheral device via the device hardware abstraction layer.

17. (Currently Amended) The system of claim 16 wherein the device hardware abstraction layer comprises:

memory registers register locations adapted to be configurable during initialization; and
an interrupt connections adapted to be configurable configuration, which configures at least one interrupt connection for the peripheral device during initialization of the system.

18. (Currently Amended) The system of claim 17 wherein the memory registers register locations and the interrupt connections configuration define the structure of the peripheral device using variables.

19. (Original) The system of claim 16 wherein the configurable structure of the peripheral device is defined in the device hardware abstraction layer using variables, the platform hardware abstraction layer comprising:

a memory map of memory locations of the peripheral device corresponding to a particular implementation of the peripheral device, the memory map adapted to replace the variables with unique memory locations for each instantiation.

20. (Currently Amended) The system of claim 16 wherein the configurable structure of the peripheral device is defined in the device hardware abstraction layer using variables, the platform hardware abstraction layer comprising:

an interrupt configuration corresponding to interrupt connections for a particular

implementation of the peripheral device, the interrupt configuration adapted to replace the variables with values that define unique interrupt connections for each instantiation.